

*Final Report--Objective F, Tasks 1a and 1b
Covering the Period 1 October 1986 to 30 September 1987*

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FEEDBACK AND PRECOGNITION DEPENDENT REMOTE VIEWING EXPERIMENTS (U)

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ABSTRACT (U)

Two different precognition experiments were conducted during FY 1987. The first of these involved a well-calibrated viewer (Subject 372) and used natural Bay Area sites as targets. Ten real-time and ten precognitive trials (counterbalanced) yielded no statistical evidence for remote viewing. In the second experiment, four viewers contributed approximately 30 trials each in a similar counterbalanced real-time vs. precognition protocol. In this experiment, however, the target material were photographs from a national magazine. No statistical evidence for remote viewing was observed in this experiment. In a third experiment designed to explore the role of feedback upon remote viewing quality, two of four viewers produced independently significant evidence for remote viewing. A number of speculations are offered as to possible mechanisms including real-time data acquisition and global precognition with noise reduction.

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I INTRODUCTION (U)

Since 1973, remote viewing (RV) has been observed under a wide variety of different conditions. A few of many possible examples are coordinate RV* (targeting by geographical coordinates),¹ beacon RV (known person at the remote site),² abstract targeting (targeting by the word "target" or by a random number or binary number),³ and targeting by remote tasking, in which the task is sealed in an envelope which is geographically isolated from the viewer. To first order, all of these (and more) have been demonstrated successfully in laboratory conditions.

The main difficulty in trying to understand the various successes of RV from a fundamental point of view is that RV appears to require a large number of basic theories to explain the variety of observables. How is it possible to describe access to remote information with a single unifying concept when the target has been specified by a complex series of random events, separated in time and space, and these events are completely unknown to the viewer? This problem has been one of the main sources of criticism about the existence of RV, in that nothing else in nature appears to have such properties. (It is beyond the scope of this report to argue this point. It suffices to say that most of the great advances in science contributed to the organization and understanding of seemingly unrelated data. The ultraviolet catastrophe and early atomic spectra are but two examples of the confusion prior to the understanding provided by early quantum theory.)

(U) SRI has been developing a heuristic model of psychoenergetic functioning⁴ that has the potential of providing some understanding of the RV confusion described above. It is based upon a concept called precognition. Since the 1930s, the parapsychology literature has been reporting experiments that claim to demonstrate the existence of precognition--remote viewing of target material that had not been specified at the time of the viewing. As yet, there is not a meta-analysis of this literature, but there is a review of the experimental support for

* (U) References may be found at the end of this report.

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precognition.⁵ Morris found a number of compelling studies that support the concept, but in his opinion all have possible real-time--albeit, at times, somewhat strained--explanations. In 1976, SRI reported four successful RV trials conducted in a precognition mode.² Similarly, the Princeton Engineering Anomalies Research (PEAR) group have conducted ~500 RV precognitive trials with results beyond chance expectation.^{6,7} Working with a selected viewer, M. Besent, Krippner *et al.* found highly significant evidence in 1972 to support precognition in a dream environment.⁸ Finally, working with Besent in 1987, Honorton continued to find stable and strong evidence for precognition in a computer driven forced-choice experiment.⁹

(U) A typical precognition protocol for a single RV trial is as follows:

- (1) At 10:00, a viewer and monitor are sequestered.
- (2) From 10:10 to 10:25, the viewing is conducted. The viewer is asked to provide information about a target that will be generated at the completion of the session.
- (3) At 10:30, an assistant, who is blind to the session, randomly selects a target from a large pool of target material.
- (4) At 10:35, the viewer and monitor debrief the session using the selected target as feedback material.

Even though substantial numbers of precognition experiments have been done elsewhere, SRI has conducted all of the RV sessions (with the exception of the four trials in 1976) using variations of a real-time protocol--the target material has been randomly selected *prior* to the RV session.

(U) If precognition is a fact of nature, then it represents a possible mechanism by which the viewer has access to the target material *regardless* of when that material was generated. Conceptually, if there is an answer to an experimental question then, in principle, a viewer can gain access to the "answer book" to obtain the necessary information. What occurs to generate the "answer book" is completely superfluous. Such an "answer book" would provide a convenient explanation of how RV occurs in spite of all the different and elaborate targeting procedures. The "answer book" in these cases is the result of the viewing.

(U) An obvious difficulty arises if all this is true. What constitutes an "answer book?" The most direct "answer book" might be the reporting of the target material to the viewer after the session (feedback). Unfortunately, the situation is more complex. There are no examples in nature that are fundamentally anthropomorphic. If information from a future time is available, then most certainly it is available to anyone. The implication, then is that viewers obtain

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information regardless of the feedback parameters--including no feedback to the viewer at all. Quickly, we arrive at a position that the precognition model of information acquisition is fundamentally unfalsifiable--therefore a nonproductive concept. Yet as indicated above, many experiments suggest that precognition may be possible.

(U) One approach to the problem is to examine precognition empirically. During FY 1987, therefore, SRI conducted two different experiments that addressed separate aspects of the concept. The first of these,¹⁰ initiated during FY 1986, involves using a tachistoscopic display of the feedback material to attempt to manipulate the information available to the viewer from the future. The other was a standard RV experiment, using a protocol similar to the one described above, in an attempt to replicate the earlier precognition results. This report describes these experiments in detail.*

* (U) This report constitutes the deliverables for Objective F, Tasks 1a and 1b.

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II METHOD OF APPROACH (U)

A. (U) Real-Time vs. Precognition Experiment

(U) During FY 1987, SRI conducted two experiments to examine the effects of target generation time in RV data acquisition. The first of these was with a selected viewer using natural locations within 30 minutes driving time from SRI as target material. In the other experiment, four experienced viewers used photographs from the *National Geographic Magazine* as target material. In both experiments the time of target generation (before or after the RV session) was unknown to either viewers or monitors.

1. (U) The Beacon RV Series

(U) To examine the role of target generation upon out-bound RV experiments, SRI asked an experienced viewer (Viewer 372) to participate in a 20-trial series. Viewer 372 has been calibrated in this particular task in that he/she has demonstrated significant RV performance in all (2) of the beacon experiments conducted at SRI.^{11, 12} Furthermore, Viewer 372 has expressed strong preference for this type of experiment rather than those that use photographs as targets.

The target material consisted of 66 natural outdoor locations within a half-hour's drive of SRI. The sites were selected on the basis of the past performance of Viewer 372. Thus, the target selection criteria allowed sites that would be more difficult for novice viewers. The intent was to produce a target pool with a variety of different material. For Viewer 372, the variety could be architectural (and other details) as well as general gestalt features.

a. (U) Protocol

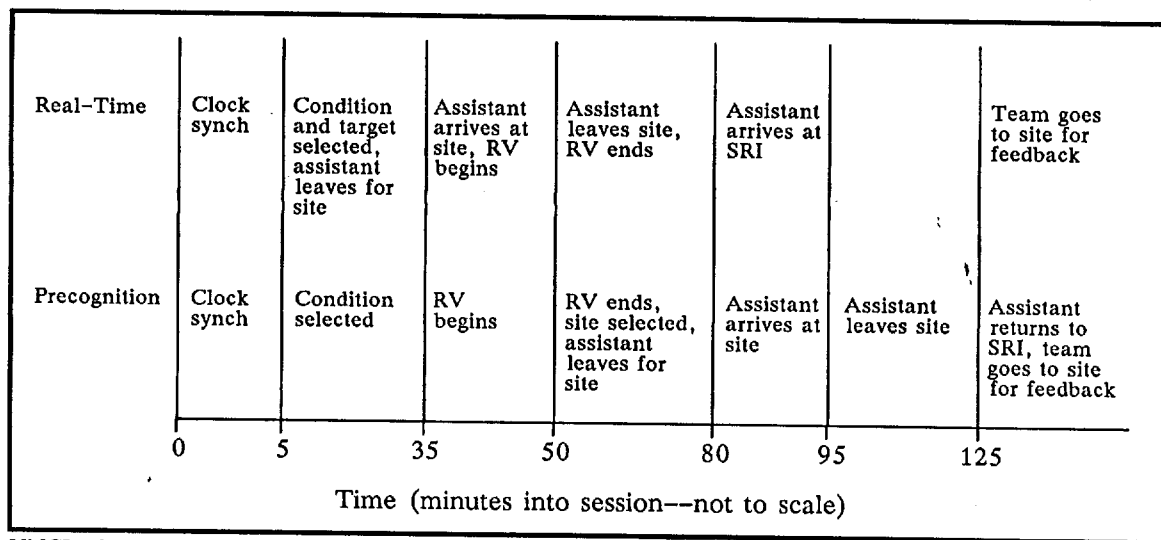
(U) The viewer and the monitor were blind to both the target pool and the individual target selections. At the beginning of each trial, the viewer and monitor were sequestered in the RV laboratory. The assistant then selected the target generation time and, if appropriate, the target site. The target selection time for each trial was determined according to

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a balanced random protocol. In the real-time condition, the target site was selected *prior* to the remote viewing, and the assistant (beacon) had to be at the target site. In the precognition condition, both the target selection and the beacon activity occurred *after* the remote viewing was concluded.

(U) In order that both experimenter and viewer would be blind to the target generation time, the timing of events was synchronized according to the diagram shown in Figure 1.



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FIGURE 1 (U) TIMING FOR THE BEACON RV EXPERIMENT

(U) After selecting the site, the assistant remained there for 15 minutes. During that period, the assistant photographed the target with a Polaroid camera and recorded impressions orally on audio tape. The pictures and recordings were used as a part of the feedback when the viewer was taken to the site.

(U) The RV session lasted about 15 minutes (corresponding to the time the beacon was at the site) during which the viewer recorded his/her impressions of the target by drawing and writing descriptions. Sessions were also video taped as part of a separate experiment.¹³ When the session was finished, all responses were copied and the originals were given to an experiment coordinator. The viewer and monitor then proceeded (with the copies of the session material) to the site for feedback. After the initial meeting prior to the experiment, there was no contact between the beacon person and the viewer or monitor, in order to maintain a strict double blind for the target generation.

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UNCLASSIFIED**b. (U) Analysis**

(U) After the completion of the 20 trials (10 in each target generation time condition), the monitor prepared the material for the analyst. The responses were examined to determine whether any temporal clues existed (none did), and were randomly labeled. Since the protocol specified that each used target was returned to the pool, it was possible that a target could be used more than once. The monitor prepared a numbered list of 20 targets (not in session order) which included all targets used during the experiment and, if necessary, randomly chosen decoy targets to complete a set of 20.

(U) The 20 targets and responses were given to two experienced analysts for judging. The analysts' task was to rate on a continuum scale each response as to the degree of correspondence with all 20 targets. A rank ordering was then prepared from the continuum assessments. From these data, two 10x10 matrices were constructed, one each for the two conditions. Each matrix was arranged so that the correct matches lie on the diagonal. Let T_0 be the trace of this matrix. By permuting rows (or columns) we calculate how many matrices would have a trace less than or equal to T_0 . The fraction, $T_0/n!$ represents the p-value for the condition.¹⁴

2. The Target Photograph Series

(U) This series was conceptually similar to the one just described. The primary differences were the target material (200 *National Geographic* Magazine photographs instead of natural sites) and the associated timing.

a. (U) Protocol

(U) The protocol differed from that shown in Figure 1 in that the various activities were driven by a series of signals rather than timed to the clock. Once the viewer and monitor were sequestered in the RV laboratory, the monitor signaled an assistant by telephone, letting the phone ring once. During a one-minute interval, the assistant determined which target generation time condition to use (from a balanced random protocol) and either generated a target or not. If a target was generated for the real-time condition, it was placed in a predetermined location (on a different floor from the RV laboratory); a blank folder was placed if the condition was precognition. When the minute had elapsed, the assistant used the one-ring signal to the monitor that it was time for the session to begin. When the RV session was completed, the monitor signaled the assistant with one ring. If the condition was real-time, the assistant waited one minute and returned the one-ring signal to the monitor. If the condition was

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precognition, the assistant generated a target, and replaced the blank folder with the actual target. At the end of the minute, the assistant returned the one ring signal to the monitor.

(U) The monitor then copied the response material, left the copies with the viewer, presented the originals to an experiment coordinator, obtained the target, and returned to the RV laboratory to provide feedback to the viewer. After an extensive debrief period, the session was concluded.

(U) Two experienced viewers (Viewers 009 and 454) contributed 30 sessions (15 in each condition) each using the above protocol. Experienced Viewer 105 contributed 13 sessions in each condition, and experienced Viewer 177 contributed 9 sessions in the real-time condition and 12 in the precognition condition. Viewers 105 and 177 exercised their option to stop this experiment in accordance with the human-use guidelines.

b. (U) Analysis

(U) The analysis has been described elsewhere,¹⁵ so only an overview will be presented here. Using cluster analysis, all 200 targets had previously been assigned to orthogonal clusters of similar targets (i.e., each cluster of similar targets differed from every other cluster). The assistant prepared packages (one for each viewer) consisting of all the responses randomly ordered. Next, he/she generated an ordered list (on target ID) of seven targets for each response consisting of the actual target and six decoys (a different set of seven for each response). The decoys were chosen from clusters different from each other and different from the target cluster. The decoy clusters were chosen randomly from a set of 18, weighted by the number of targets in each cluster. Once a cluster was selected, the decoy was randomly selected from within the cluster. This procedure assured that all targets were equally likely to be chosen as a decoy.

(U) The response material, and the target lists were presented to two analysts for judging. The analysts rank ordered each set of seven targets for each response in accordance with the best to the worst response/target match. For each viewer, a sum-of-ranks statistic was computed for the sessions regardless of condition, and separately for the two target generation conditions.

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UNCLASSIFIED**B. (U) The Tachistoscope Experiment**

(U) During FY 1986, SRI developed the protocol, hardware, and software that were necessary to conduct a feedback-dependency experiment.¹⁰ The basic idea was to try to identify the time frame within which the viewer is accessing information. The target material is available in real time and feedback is provided immediately after each session.

(U) One important assumption was necessary in order to provide meaning to the experiment. Namely, the feedback experience was assumed to be proportional to the *cognitive* awareness of the feedback material. Under this assumption, the amount of information available at feedback time constituted the independent variable. Using techniques derived from vision research,¹⁵ 40 targets (selected randomly from the pool of 200 *National Geographic* Magazine photographs) were prepared into 8 intensity groups of 5 targets each. Each intensity group represented the cognitive awareness that each viewer would experience (on the average) at feedback time. Of the eight intensities, one was zero (i.e., no feedback at all), one was below subliminal threshold (SL), one was low SL threshold (~25% recognition), one was mid SL threshold (~50% recognition), one was high SL threshold (~75% recognition), and three were of increasing intensity above 100% recognition. Experientially, the top two intensities were sufficient to experience nearly complete cognitive awareness of the feedback material. By definition, those below SL could not be cognitively sensed.

(U) Because of the difficulties outlined in Section I, great care was exercised to limit the information in the "answer book." At no time in the future would a response be cognitively compared to its intended target. Three pieces of information are needed to provide complete knowledge of a session; (1) the target, (2) the response, and (3) the comparison between them. The target system was prepared by individuals who would not have access to the responses. The monitor, assistant and viewer did not have access to the targets. Last, the analysts were never informed which were the correct results on a trial-by-trial basis.

(U) Technically, the tachistoscope (the device to display the feedback material) was controlled by a computer in such a way that everyone was blind to target selection during a trial. For example, the slide tray always began and ended in the zero position, and a positive feedback loop assured that the intended target was displayed at the correct time.

a. (U) Protocol

(U) Three experienced viewers (Viewers 009, 105, and 177) contributed 40 trials (5 at each intensity level) each. A novice (Viewer 137) also contributed 40 trials. A random order of intensities of feedback was determined (by computer) once (and differently) for

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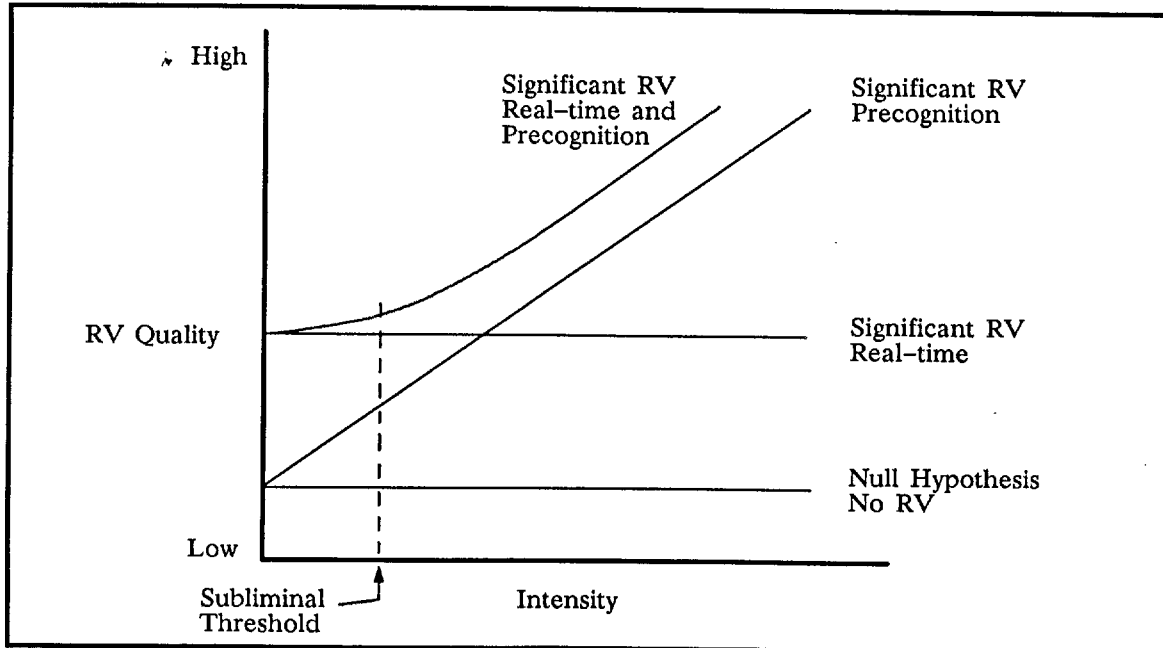
each viewer. Once the order had been set, the trials cycled through the list of intensities until the 40 trials were complete. For a given intensity, a random selection (with replacement) was made in real-time from the five possible targets. Once the target selection was complete, the computer stepped the slide tray to the appropriate position and signaled the monitor (on a remote terminal) to begin the session.

(U) When the viewing was complete, the viewer opened a window cover to observe the feedback. (The monitor was prevented from seeing the feedback.) When the viewer was ready, he/she initiated the feedback by pressing a button. One, and only one, display appeared on the translucent window screen. (Electronics prevented the viewer from receiving more feedback after the first button press.) The monitor was instructed *not* to discuss the experience with the viewers in any way.

(U) Upon the completion of the session, the monitor signaled the computer that the session was over and the computer in turn cycled the slide tray back to zero and stored the target information in a file. At that time, the viewer was free to go.

b. (U) Analysis

(U) The analysis proceeded exactly as described in Section II A.2.b. In addition, however, the data were plotted as RV quality vs. feedback intensity. A schematic representation of this plot and some possible interpretations are shown in Figure 2.



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FIGURE 2 (U) IDEALIZED CURVES OF POSSIBLE RELATIONSHIPS BETWEEN RV QUALITY AND INTENSITY OF FEEDBACK

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III RESULTS AND DISCUSSION (U)

A. (U) Real-Time vs. Precognition Experiments

1. (U) The Beacon RV Series

(U) Table 1 shows the results of the 20-session beacon RV series.

Table 1

(U) RESULTS FOR VIEWER 372

Condition	Trace	p-value
Real-time	45.5	0.154
Precognition	51.5	0.638

Overall, no condition met the criteria for statistical significance. For Viewer 372, this represents the first time at SRI that a series has *not* met statistical significance out of four attempts (counting each condition as a separate attempt). Given Viewer 372's track record, we allow for some speculation as to possible reasons for the results of this series.

Viewer 372 first participated in a six-trial RV experiment in FY 1980. That study produced four first place matches and two second place matches for a combined p-value of 0.003.¹¹ His/her second participation was in FY 1986, when twelve beacon RV trials were conducted with an overall p-value of 0.007.¹² Combined with the two efforts in FY 1987 (see Table 1) the average p-value is 0.201. Using an exact calculation,¹⁸ the probability of observing an average p-value of 0.201 in 4 experiments is 0.017. This is consistent with a minimum p-value (0.003) technique¹⁷ which yields 0.012.

There are at least two possible hypotheses for this experiment not reaching significance. The first (and most likely one) is given by Utts.¹⁸ If one is willing to estimate a "hit" rate given that RV

is real, then it is possible to calculate the probability of observing a significant study. While it is difficult to ascertain the actual "hit" rate for RV, Utts provides an estimate for a similar process--Ganzfeld. For a 10-trial study the probability of observing a significant result is only 15%. (MCE is 5%, of course.)

Secondly, a new variable was introduced by the nature of the protocol. The time between the remote viewing and the feedback was greater than two hours. This represents an order of magnitude increase over our other experiments. The influence of this increase is currently unknown.

2. The Target Photograph Series

Table 2 shows the results of the four-viewer real-time vs. precognition experiment. Based on the sum of ranks and their associated p-values, there was no significant evidence of RV in this series.

Table 2
(U) REAL-TIME VS. PRECOGNITION RESULTS *

Viewer \ Cond.	Real-time	Precognition	All	Trials rt/pc
009	57 (0.375)	62 (0.625)	119 (0.482)	15/15
105	61 (0.905)	51 (0.473)	112 (0.797)	13/13
177	32 (0.283)	46 (0.415)	78 (0.275)	9/12
454	70 (0.912)	68 (0.862)	138 (0.954)	15/15
Totals	220 (0.203)	227 (0.472)	447 (0.179)	52/55

* (U) Sum-of-ranks (p-value)

Based on the past performance (in real-time RV) of these particular viewers, the results are disappointing. Yet, because of their record, we speculate upon possible reasons why this experiment did not reach significance.

As described above, an estimate (provided by Utts¹⁸) of the probability of a significant 10-15 trail RV series is approximately 15%. Yet it remains surprising that no significant series was observed in eight attempts.

A possible problem is that this particular experiment was conducted after the successful tachistoscope experiment (described below). That experiment required 40 trials from each viewer. Since this experiment required 30 trails from each viewer, a given viewer had to produce 70 remote viewings in approximately 80 days.

In summary, then, we were unable to demonstrate a significant RV phenomenon in the real-time vs. precognition experiments. Considering the vast amount of data in the literature that claim the existence of precognition, we recommend that the study should be continued at a later date.

B. (U) The Tachistoscope Experiment

(U) Table 3 shows the sum of ranks and associated p-values for the tachistoscope feedback experiment.

Table 3

(U) TACHISTOSCOPE FEEDBACK EXPERIMENT *

Viewer	Result
009	131 (0.012)
105	182 (0.962)
137	159 (0.484)
177	104 (3.5×10^{-6})

* (U) Sum-of-ranks (p-value)

Viewers 009 and 177 produced independently significant results. There are a number of ways in which we could combine these data, but the most conservative is a binomial calculation assuming an event probability of 0.05. Two successes in four trials corresponds to an exact

p-value of 0.014. A more realistic estimate is provided by a minimum p-value (3.5×10^{-6}) technique which yields 1.4×10^{-4} .¹⁶ The important point, however, is that this experiment produced strong evidence for an informational anomaly.

Figures 3 and 4 show RV quality (1 is low, 7 is high) plotted against intensity of the feedback for Viewers 009 and 177, respectively. Shown also is the regression line for each viewer. These figures are to be compared to Figure 2, the idealized expectations. The result that is easiest to understand in Figure 2 is the positive correlation showing increased RV performance with increased feedback intensity. We did not observe any such correlation with either of the significant viewers. In fact, the linear correlation coefficients were not significant.

The lack of positive correlation in the light of significant evidence of RV complicates the interpretation considerably. The most obvious conclusion is that the viewers obtained their data in real time and not from the later feedback. But, if the argument posited in Section I is correct (that precognition is unfalsifiable), then the experiment was doomed to failure from the start. Another equally likely hypothesis is that the underlying assumption that cognitive awareness constitutes feedback information is incorrect. If this were true, we would expect to see no correlation with intensity even if the precognition model were correct.

Viewer 177's average sum of ranks was significantly ($p < 0.02$) greater than his/her sum of ranks in the real-time vs. precognition experiment. Viewer 009 produced a strong and similar trend that obtained a probability against chance of 0.08. Assuming these differences are meaningful, we can speculate that something in the tachistoscope experiment resulted in a significant noise reduction. Possibly, short exposures to feedback material allow the viewer to focus only upon the major items and thus reduce the noise--the precognition model is assumed here. In any event, continuing this experiment would shed light on the difficult feedback interpretation problem.

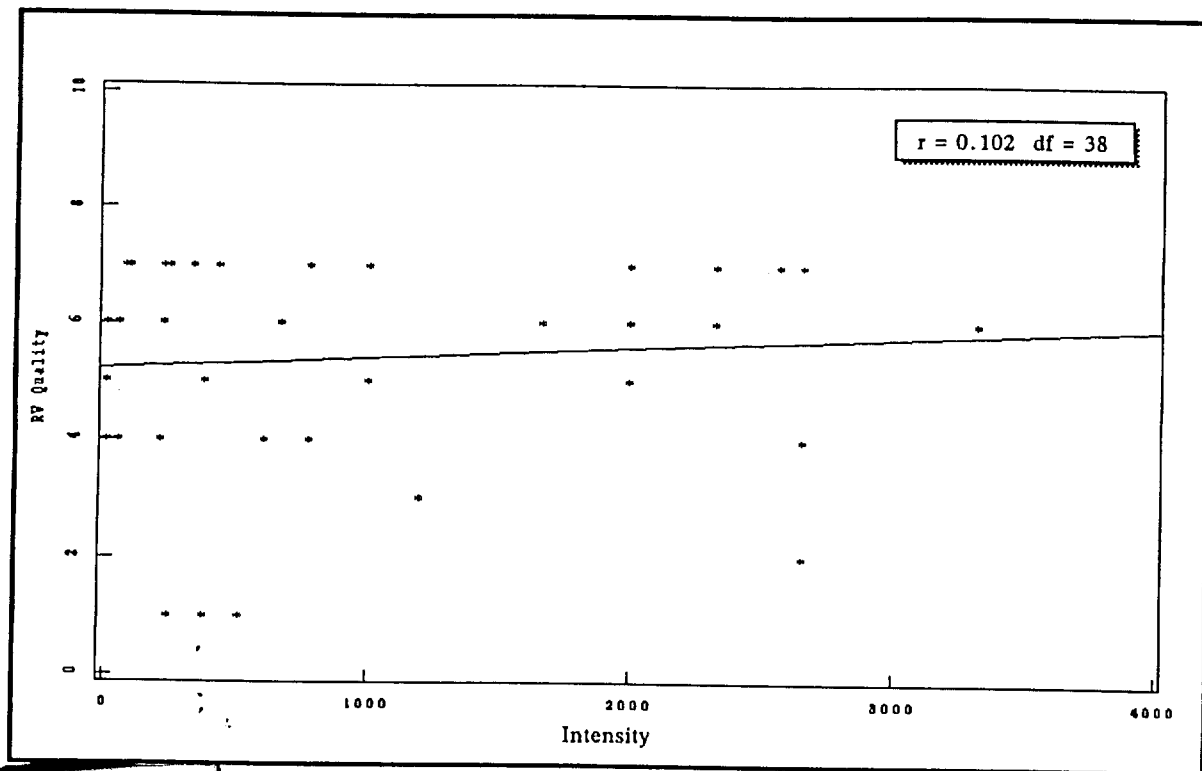


FIGURE 4 (U) RV QUALITY VS. FEEDBACK INTENSITY: VIEWER 177

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